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# Etanercept-induced anti-Jo-1-antibody-positive polymyositis in a patient with rheumatoid arthritis: a case report and review of the literature.

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Case [Reference number]	Patient 1[11]	Patient 2[12]	Patient 3[13]	Patient 4[14]	Present case
Age(yrs) & Sex	44 female	52 female	52 female	57 female	58 female
RF/CCP	−/−	+/ND <sup>※1</sup>	+/ND	+/ND	+(724.7)/+( > 100)
Duration from RA until anti-TNF therapy(Tx.) initiation (yrs)	1	20	33	26	2
Previous Tx. for RA	HCQ <sup>※2</sup> , MTX <sup>※3</sup>	MTX	MTX	All available DMARDs	BUC <sup>※4</sup> , TAC <sup>※5</sup>
Anti-TNF therapy	Etanercept	Infliximab	Infliximab	Etanercept	Etanercept
PM/DM onset from anti-TNF Tx. initiation	6 months	6 months	9 months	6 wks after re-treatment	2 months
Maximum CK <sup>※6</sup> (IU/L)	11,593	> 12,000	3,388	1,067	1,538
pre FANA	−	1:320, pattern unknown	1:640, Ho. <sup>※7</sup> /Spe. <sup>※8</sup>	1:160 (1999)	1:320, Ho./Nuc. <sup>※9</sup>
FANA	1:640, Spe.	1:320, pattern unknown	1:640, Ho./Spe.	1:2560 (2003)	1:320, Ho./Nucl
Pre <sup>※10</sup> anti-dsDNA antibody	ND	−	−	ND	−
Anti-dsDNA antibody	ND	1:20	IgM (131U/mL)	ND	− (IgG 11 U/mL)
Pre Anti-Jo-1 antibody	ND	+	+ ( > 500 U/mL) (ELISA)	ND	206.9
Anti-Jo-1 antibody	+	+	+ (> 500 U/mL) (ELISA)	ND	239
Electromyogram	ND	ND	ND	Myogenic pattern	Myogenic pattern
Muscle biopsy	Necrosis, perivascular interstitial infiltration	Diffuse necrosis, inflammatory infiltrates	Size variation, inflammatory infiltrates	Necrotizing myositis	Mild inflammtory infiltrates and necrosis
Diagnosis	Dermatomyositis	Polymyositis	Polymyositis	Polymyositis	Polymyositis
Course & types of ILD	Improved; NSIP <sup>※11</sup> ?	Improved; UIP <sup>※12</sup> ?	Improved; NSIP ?	ARDS developed, due to PCP <sup>※13</sup> ?	Improved; NSIP or BOOP <sup>※14</sup>
Tx. for PM/DM <sup>※15</sup>	High-dose PSL <sup>※16</sup> plus AZP <sup>※17</sup> 150 mg & MTX 10 mg/wk	MP <sup>※18</sup> pulse 1.0 g plus PSL 1mg/kg	PSL 30 mg plus TAC 3 mg	High-dose PSL plus IVCY <sup>※19</sup> (500 mg/m <sup>2</sup> )	PSL 1mg/kg plus MP pulse 0.5 g
Outcome of myositis	Marked improvement	Marked improvement	Marked improvement	Marked improvement	Marked improvement

**Table 1. Clinical Characteristics of Reported RA Patients Who Developed PM/DM After Anti-TNF Therapy**

※1 ND Not done or Not described \* 2 HCQ \* 3 MTX methotrexate hydroxychloropuine \* 4 BUC bucillamine \* 5 TAC tacrolimus \* 6 CPK creatinine phosphokinase \* 7 Ho. Homogenous pattern \* 8 Spe. Speckled pattern \* 9 Nuc. Nucleolar pattern \* 10 pre value before initiation of anti-TNF \* 11 NSIP non-specific interstitial pneumonia \* 12 UIP unusual interstitial pneumonia \* 13 PCP pneumocystis pneumonia \* 14 BOOP bronchiolitis obliterans with organizing pneumonia \* 15 All treatment include withdrawal of anti-TNF therapy \* 16 PSL prednisolone \* 17 AZP azathioprine \* 18 MP methylprednisolone \* 19 IVCY intravenous cyclophosphamide